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Excerpt from a radio talk by
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district, Food and Drug Administration,
U. S. Department of Agriculture,
broadcast through WJZ, New York, and
associated N.B.C. stations, April 27, 1931.

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MAY 4 1931
Serial No. 51
U. S. Department of Agriculture

HOW TO READ THE LABEL

Mineral Waters

There are many springs and spas throughout the world, the waters of which have achieved reputations for certain useful purposes. People go to these springs to take the treatments, which involve drinking the water, baths, rest, diversion, and certain medical and hospital treatments. These combinations often produce beneficial results in conditions for which the climate, the baths, the medical care, the hospital treatment, the rest, and the drinking of large quantities of water, in combination, are beneficial.

Of course, bottled waters consumed away from the springs cannot be expected to accomplish the same results as a sojourn at the springs.

Bottled mineral waters have a proper place in commerce. Some people prefer to use the same kind of drinking water regularly, and are able to avoid changing from day to day while traveling by purchasing their favorite brand of bottled water. Others, when on journeys, prefer bottled waters because they are more certain of their sanitary quality. Certain sick people will consume more water, if it comes from bottles, than they would ordinarily and, where ingestion of large quantities of water is indicated, it is desirable to have bottled spring water available. Then, certain waters are softer than others and some people prefer soft waters for drinking. Certain other people, who prefer a carbonated water, can secure this in bottled form. Mineral waters are a source, but by no means an exclusive or necessary source, of some of the minerals essential to proper nutrition. There are also certain waters which have laxative, diuretic, or antacid effects, depending upon the nature of the dissolved constituents. Where such waters are needed, they are available in bottle form.

Now, when this has been said you have the sum and substance of the value of bottled waters, notwithstanding that many other claims are made to further the sale of specific kinds of bottled waters.

Let us see what a mineral water is. Mineral water is a water which contains in solution mineral constituents derived from contact with the earth through which the water has seeped or percolated.

Bottled mineral waters may be classified as:

(1) Lightly mineralized table waters containing only an insignificant amount of dissolved ingredients.

(2) Those in which dolomitic limestone predominates, the limestone being held in the solution by carbon dioxid. These waters are antacid.

(3) The Vichy type in which sodium bicarbonate predominates, known also as the soda type. These are also antacid waters.

(4) Those in which sodium chloride or common salt predominates. These are saline waters and saline waters produce diuretic effects.

(5) Those in which epsom salts, glauber salts, or both, predominate. These are the laxative waters; they are also saline.

(6) The chalybeate, or iron type.

(7) The sulphur type, the pronounced dissolved ingredient of which consists of a form of sulphur.

The amounts of dissolved mineral constituents of mineral waters vary considerably. Chemists of the Food and Drug Administration have found as little as 25 parts per million of dissolved mineral matter, and as much as 20,000 parts per million in commercial mineral waters. Many people who drink bottled waters for their supposed therapeutic effect, lay great stress upon the fact that the water is a natural spring water, a product of old mother nature. Now, read labels. If waters are not natural, the labels will tell you so and, in this connection, you should know that some waters are modified before bottling. Products are added to waters to give them certain effects or to supplement mineral constituents already present. Constituents are taken away from waters - as in the case of waters high in oxide of iron, which is removed before bottling by the settling process. If iron is taken away from a bottled water, the label must tell you this fact. In the case of effervescent water, if the gas is natural to the water, the label will often declare it to be naturally carbonated. If carbon dioxid gas, to carbonate the water, is added, the label must tell you, so that you will not take the gas to be a natural constituent. If the water has been recarbonated with carbon dioxid which has been collected as it escaped when the water emerged from the spring, the label will tell you that natural carbon dioxid gas has been used to recharge or recarbonate the water. If the carbon dioxid comes from other sources than the spring itself, then the label will declare the water to be artificially carbonated, or will state, "carbon dioxid added."

Common salt is sometimes added to table waters to make them more palatable. Epsom or glauber salts, or both, are frequently added to mineral waters to produce or to increase cathartic effects. In all such cases the labels will tell you the waters are reconstituted or reinforced and will name the added ingredients. Some mineral waters are boiled to concentrate the mineral constituents. These must be labeled to show that they are not natural and that they are artificially concentrated. Some mineral waters are wholly imitation, made by adding mineral constituents to ordinary water. If such waters are sold as mineral waters they must be labeled to show their true character. Certain springs in the United States produce waters which are similar in composition to the

waters of Vichy and Carlsbad, in Europe. These may not be called Vichy and Carlsbad water, but are properly labeled, for example, Saratoga Vichy and Kentucky Carlsbad.

Many waters are sold on claims that they possess marvelous curative values and frequently, in connection with the merchandising of the products, legendary stories are told about the marvelous curative benefits which were derived by the Indians from drinking the water. This old Indian yarn was ancient some time ago, but it seems now to be coming back into use, displacing another worn-out gag, which had popularity for a long time. That was the sale of water on the claim that it produced wonderful curative effects because of its lithium content. Such waters were called lithia waters. In practically all instances it would have been necessary for an individual to consume about 500 gallons of so-called lithia water per day in order to get a therapeutic dose of lithium, so small were the quantities of lithium in the lithia waters of yesteryear. This game became very unpopular when your Government seized shipments and prosecuted the shippers on the charge of misbranding, so now the old Indian story is coming back. Another practice is to claim that the product contains radium, or that it possesses curative radio activity, and that therefore it is a panacea for all human ills. Faint traces of radio activity are found in many waters, but the quantities are so small that they have essentially no effect.

Many cases involving claims of radio-activity and consequent curative value have been successfully prosecuted on the charge that such claims are false and fraudulent and mineral-water-radio-activity exploitation is destined to go the way of the lithia balloon, which burst. A favorite trick in the radium-water racket is to incorporate the word, "radium," in the name of the company, as for example, "The Blank Radium Springs." Don't be misled by claims of radium content or radio-activity, or by the word, "radium," in the name of the spring, because waters positively have no especially beneficial effect because of any radium content or radio-activity.

You will find on some bottled waters labels that purport to give the chemical analysis of the water. Unfortunately, all chemists do not report analyses in the same form, which makes the interpretation of a water analysis very confusing to the layman. Some are reported in parts per million and some in grains per U.S. gallon - others in grains per Imperial gallon. In order to place these various systems on a basis for comparative understanding, it may be stated that a U.S. gallon is equal to 58,416 grains - one Imperial gallon is equal to 70,071 grains. Therefore one grain per U.S. gallon equals a little over 17 parts per million and one grain per Imperial gallon equals slightly over 14 parts per million.

You can get an idea, by reading the analysis statement, as to the particular kind of water you are buying. Let me try to interpret a water analysis for you. I had before me, when I prepared this talk, a bottle of mineral water labeled with an analysis. The first item given was silica, 0.3499 grains per U.S. gallon. Now, silica is a form of sand and is held dissolved in the water in some combination such as sodium silicate. The first item in this analysis tells us that this water contains dissolved sand to the extent of about one-third of one grain per gallon.

The next item given was iron and aluminum oxides 4.5488 per gallon. Of course, these constituents were not actually present in the water in the form of iron and aluminum oxides, since these substances are insoluble and would appear in the water as a red deposit or sediment. The water to which this label applies is a clear water, therefore, the iron and aluminum are present in the form of soluble salts of these two minerals, but have been calculated as iron and aluminum oxides, as this is the conventional method which the chemist employs in reporting these constituents. The next item in the analysis was calcium sulphate, 5.6568 grains per U.S. gallon. Calcium sulphate is better known as gypsum. This water therefore contains about 5-1/2 grains per gallon of gypsum dissolved in it. The next item was magnesium sulphate, 0.4665 grains per gallon. This chemical will be recognized by you under the name of epsom salts. Then came magnesium carbonate, 10.2640 grains per gallon. Magnesium carbonate is an important constituent of dolomitic limestone. Sodium carbonate was reported next as 0.8748 grains per gallon. Sodium carbonate is washing soda but undoubtedly the substance present in the water was baking soda or sodium bicarbonate. The next item was sodium chloride, 1.3996 grains per gallon. Sodium chloride is table salt. The next item reported was organic matter declared as a faint trace. This item may be ignored as of no significance, except from the standpoint of judging the sanitary quality of the water, and then only when taken in conjunction with a bacteriological analysis. The final item reported in the chemical analysis was, total solids 23.5604 grains per gallon. This item is and should be the sum of all of the other items and tells you that the total dissolved mineral matter in the water amounts to about 23.6 grains per gallon. In the light of this analysis, a chemist would conclude that this is a moderately mineralized water characterized by its content of iron, calcium sulphate, and magnesium carbonate, together with smaller amounts of silica, magnesium sulphate, sodium carbonate, and sodium chloride. It is not any more highly mineralized than some ordinary well waters, especially from wells in the southwest. There is little that can be truthfully said of the therapeutic properties of this water beyond stating that it has an alkaline reaction and is very slightly laxative. Notwithstanding this, the following statement appeared in large conspicuous type on the right panel of the label: "This water alleviates Rheumatism, Stomach, Liver, Kidney, and Nervous Conditions, Bright's Disease, Dropsy, Diabetes, Gout, and Diseases of Blood and Skin." This label which I had before me violates the food and drugs act because the claims of curative value are false and fraudulent, and it will be given attention from that angle.

By way of contrasting the chemical analysis of the water just described with that of a heavily mineralized water, it may be said that purgative mineral waters sometimes contain as high as 4,000 grains per gallon of sodium sulphate, (glauber salts), or magnesium sulphate, (epsom salts), or both in combination.

Do not be misled by claims of medicinal value. There are no waters which will of themselves cure kidney disease, dropsy, Bright's disease, diabetes, nervous prostration, or any other serious diseases. Therefore, you can not believe claims to this effect. When you are paying $1.00 per bottle for mineral water and you expect to keep paying that for some time, you should secure an expert opinion on that water's value. Perhaps your physician or your State Board of Health can advise you as to the value of that particular water.